

Claims

1. Power generator unit composed of a generator and a piston internal combustion engine as the drive, particularly a synchronous generator and a diesel engine, with permanent magnets arranged in the rotor of the generator, in the area of the poles, for its excitation, and a rotor winding (28) in the stator, characterized in that holder pockets (34) that are open at least on one side are formed in the pole regions of the rotor (29), in the axial direction, which border on the air gap (33) formed with the stator (11) with a cylindrical circumference wall (50), and the permanent magnets of the pole regions are each formed by a plurality of magnet elements (35), which are arranged next to one another within the holder pockets (34) in the circumference direction.
2. Power generator unit according to Claim 1, characterized in that the magnet elements (35) are arranged in the holder pockets (34) in the axial direction, in at least two rows behind one another.
3. Power generator unit according to Claim 1, characterized in that the rotor (29) is structured as an external rotor.
4. Power generator unit according to Claim 1, characterized in that the holder pockets (34) are structured to be continuous in the axial direction and open, and that the thickness of the circumference wall corresponds to about half the radial thickness of the magnet elements (35).

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5. Power generator unit according to Claim 4,
characterized in that
the holder pockets (34) are extended on both sides beyond the last
magnet element (35) in each instance, forming a cavity (48).
6. Power generator unit according to Claim 5,
characterized in that
the circumference wall (50) continues in the region of the cavity (48),
where the wall thickness is sized in such a way, taking the dimensions of
the cavity (48) into consideration, that no de-magnetization of the magnet
elements (35) close to the edge will occur as the result of a surge short-
circuit.
7. Power generator unit according to Claim 1,
characterized in that
the holder pockets (34) border on the intermediate pole segment (52) of
the rotor (29) with a radial bridge (51).
8. Power generator unit according to Claim 1,
characterized in that
the radial inside surfaces of the holder pockets (34) are structured in
polygon shape, corresponding to the shape of the magnet elements (35).
9. Power generator unit according to Claim 1,
characterized in that
at least on the inside surface of the holder pockets (34) that lies opposite
the circumference wall (50), axial ribs (53) are provided to define the
distances between adjacent magnet elements (35).

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10. Power generator unit according to Claim 1,
characterized in that
the axial width of the rotor (29) corresponds to about twice the length of a
magnet element (35).
11. Power generator unit according to Claim 1,
characterized in that
the magnet elements (35) are attached to the inside surface of the holder
pockets (34) by gluing them on.
12. Power generator unit according to Claim 1,
characterized in that
the holder pockets (34) are covered with a lid at their axially opposite
faces.
13. Power generator unit according to Claim 1,
characterized in that
the holder pockets (34) are subdivided into individual drawers that
approximately correspond to the cross-section of a magnet element (35),
in each instance, by means of partitions that run axially.
14. Power generator unit according to Claim 1,
characterized in that
the magnet elements (35) are rectangular in cross-section.
15. Power generator unit according to Claim 1,
characterized in that
the magnet elements (35) are structured as ring segments in cross-
section.

FOOTNOTES

16. Process for fitting the rotor of a power generator unit according to Claim 1 with magnet elements (35), characterized in that magnet elements (35) that are already magnetized are used, and that the stator (11) or a magnetically equivalent ancillary device is positioned loosely within the rotor for installation, in such a way that positioning of the magnet elements (35) is essentially possible without force, and that the magnet elements (35) are attached in their position after positioning.
17. Device according to Claim 16, characterized in that the stator (11) or the ancillary device has current applied to it for positioning of the magnet elements (35).

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